

Tesis de licenciatura en Biología de Dahiana Guzmán Diseño, análisis.

true

julio 17, 2022

1 Diseño de malla

Basado en: Batlle (2021)

```
# Crear cuadrícula para diseño de muestreo
```

```
library(dplyr)
```

```
## Warning: replacing previous import 'lifecycle::last_warnings' by
```

```
## 'rlang::last_warnings' when loading 'pillar'
```

```
##
```

```
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
```

```
##
```

```
##      filter, lag
```

```
## The following objects are masked from 'package:base':
```

```
##
```

```
##      intersect, setdiff, setequal, union
```

```
library(sf)
```

```
## Linking to GEOS 3.10.1, GDAL 3.4.0, PROJ 8.2.0; sf_use_s2() is TRUE
```

```
construir_cuadrícula <- T
```

```
parque <- st_read('data/limite-parque.gpkg') # Creada en QGIS, ver nota abajo
```

```
## Reading layer `limite-parque' from data source
```

```
##   `/home/jose/Documentos/tesis-dahiana/tesis-licenciatura-biologia-uasd-/data/limite-parque.gpkg'
```

```
##   using driver `GPKG'
```

```
## Simple feature collection with 1 feature and 1 field
```

```
## Geometry type: POLYGON
```

```
## Dimension:      XY
```

```
## Bounding box:   xmin: 402699.2 ymin: 2041878 xmax: 403116 ymax: 2042246
```

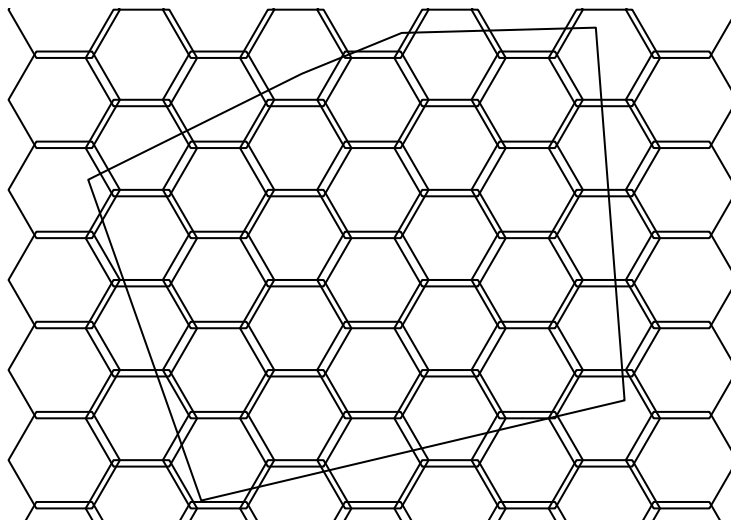
```
## Projected CRS: WGS 84 / UTM zone 19N
```

```
cuad <- st_read('data/cuadricula.gpkg')
```

```
## Reading layer `cuadricula' from data source
##   `/home/jose/Documentos/tesis-dahiana/tesis-licenciatura-biologia-uasd-/data/cuadricula.gpkg'
##   using driver `GPKG'
## Simple feature collection with 63 features and 5 fields
## Geometry type: POLYGON
## Dimension:      XY
## Bounding box:   xmin: 402637.3 ymin: 2041765 xmax: 403203.5 ymax: 2042297
## Projected CRS: WGS 84 / UTM zone 19N
```

```
plot(parque %>% st_geometry)
```

```
plot(cuad %>% st_geometry, add=T)
```



```
cuad2 <- st_as_sf(cuad)
```

```
cuad2 <- cuad2 %>%
```

```
  mutate(
```

```
    ENLACE=1:nrow(cuad2),
```

```
    AREASQM1=st_area(geom) %>% units::drop_units())
```

```
cuad3 <- st_intersection(cuad2, parque %>% st_union) %>%
```

```
  mutate(AREASQM2=st_area(geom)%>% units::drop_units(),
```

```
    AREASQM_PCT=AREASQM2/AREASQM1*100)
```

```
## Warning: attribute variables are assumed to be spatially constant throughout all
## geometries
```

```
pct_eleg <- 40
```

```
cuad4 <- cuad2 %>%
```

```
  inner_join(
```

```
    cuad3 %>%
```

```
    filter(AREASQM_PCT >= pct_eleg) %>%
```

```
    st_drop_geometry() %>%
```

```
    select(ENLACE, AREASQM2, AREASQM_PCT))
```

```
## Joining, by = "ENLACE"
```

```

cuad4$ENLACE <- 1:nrow(cuad4)
cuad4$ENLACE

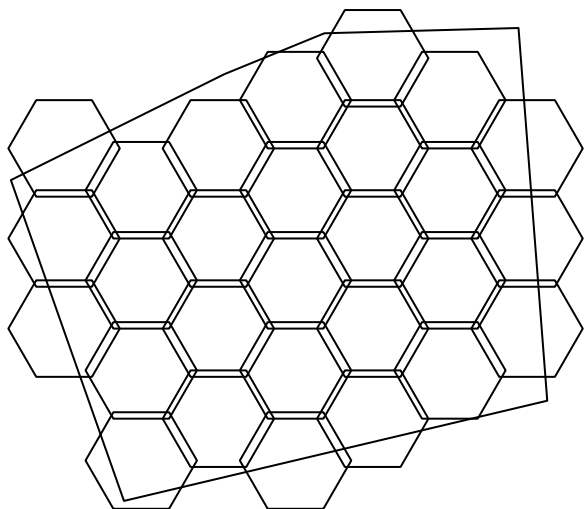
## [1] 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
## [26] 26 27 28

cuad_final <- cuad4
names(cuad_final)[grepl('^geom$', names(cuad_final))] <- "geometry"
st_geometry(cuad_final) <- "geometry"
cuad_final

## Simple feature collection with 28 features and 9 fields
## Geometry type: POLYGON
## Dimension: XY
## Bounding box: xmin: 402697.2 ymin: 2041872 xmax: 403143.5 ymax: 2042260
## Projected CRS: WGS 84 / UTM zone 19N
## First 10 features:
##   id    left    top    right  bottom ENLACE AREASQM1 AREASQM2 AREASQM_PCT
## 1   9 402697.2 2042190 402783.8 2042115     1 4871.393 2158.696    44.31373
## 2  10 402697.2 2042120 402783.8 2042045     2 4871.393 4182.277    85.85383
## 3  11 402697.2 2042050 402783.8 2041975     3 4871.393 2485.221    51.01664
## 4  17 402757.2 2042157 402843.8 2042082     4 4871.393 4871.393   100.00000
## 5  18 402757.2 2042087 402843.8 2042012     5 4871.393 4871.393   100.00000
## 6  19 402757.2 2042017 402843.8 2041942     6 4871.393 4871.393   100.00000
## 7  20 402757.2 2041947 402843.8 2041872     7 4871.393 3710.643    76.17212
## 8  23 402817.1 2042190 402903.7 2042115     8 4871.393 4871.393   100.00000
## 9  24 402817.1 2042120 402903.7 2042045     9 4871.393 4871.393   100.00000
## 10 25 402817.1 2042050 402903.7 2041975    10 4871.393 4871.393   100.00000
##
##               geometry
## 1 POLYGON ((402697.2 2042152,...
## 2 POLYGON ((402697.2 2042082,...
## 3 POLYGON ((402697.2 2042012,...
## 4 POLYGON ((402757.2 2042120,...
## 5 POLYGON ((402757.2 2042050,...
## 6 POLYGON ((402757.2 2041980,...
## 7 POLYGON ((402757.2 2041910,...
## 8 POLYGON ((402817.1 2042152,...
## 9 POLYGON ((402817.1 2042082,...
## 10 POLYGON ((402817.1 2042012,...

cuad_final <- cuad_final %>% rename(a0_square_meters = AREASQM1)
plot(parque %>% st_geometry)
plot(cuad_final %>% st_geometry, add=T)

```



```
# st_write(cuad_final, 'data/cuadricula-final.gpkg')
```

Referencias

Batlle, J. R. M. (2021). geofis/forest-loss-fire-reproducible: First release (Version v0.0.0.9000).
<https://doi.org/10.5281/zenodo.5694017>